

FLIGHT

The
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ENGINEER
AND
AIRSHIPS

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" FLIGHT " PHOTOGRAPHS.

To those desirous of obtaining copies of "Flight" Photographs, these can be supplied, enlarged or otherwise, upon application to Photo. Department, 36, Great Queen Street, W.C.2

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list :—

1927

- Dec. 8 "Fog." Capt. F. Entwistle, before R.Ae.S. and I.Ae.E.
Dec. 15 "The Development of Torpedo-Carrying Aircraft." Maj. A. F. Bumpus, before R.Ae.S. and I.Ae.E.
Dec. 31 Entries Close for R. 38 Memorial Prize (R.Ae.S.).

1928

- Feb. 1 "Aircraft in Small Wars." Wing-Comdr. R. H. Peck, before Royal United Services Inst.
Oct. 7-28 International Aircraft Exhibition, Berlin.

1929

- Oct. 31 Guggenheim Safe-Aircraft Competition Closes.

EDITORIAL COMMENT



Worse
and
Worse

LAST week we referred to the announcement that the Air Ministry was not contemplating an attempt this year on the world's speed record for seaplanes, and we then pointed out that the long delay in transporting the Schneider Trophy machine from Venice to London would probably, in any case, prevent the attempt being made this year. Now comes the news that the Air Ministry not only does not intend to make the attempt on the speed record, but that for the next Schneider Trophy race Service pilots will not be provided. Something of the sort might really have been expected from the fact that the latest Air Force List shows that the pilots of the "High-Speed Flight" have been distributed to other Air Force stations. Had it been intended that Royal Air Force pilots should take part in the next race, this year's team would presumably have been kept together. The fact that they have been scattered seems to indicate sufficiently the policy of the Air Ministry.

What are the precise reasons of the Air Ministry for coming to this decision is somewhat of a mystery at the moment, although it is freely rumoured that objection to the "publicity" which the race inevitably gives to the service pilots concerned is at the root of the matter. While we have every sympathy with the Service point of view that officers and gentlemen in His Majesty's Forces should be above such things as "limelight" and vulgar publicity, we fail to see that R.A.F. pilots are in this respect overstepping the limits of seemly behaviour. Why, it might well be asked, should it be worse for R.A.F. officers to fly in the Schneider race than for Service personnel to "perform" for the benefit of the public at the Olympia Tournaments? When one comes right down to brass tacks (we nearly wrote "Brass Hats") the Air Ministry's attitude is not a little illogical. Most of all do we sympathise with the pilots themselves. We are quite convinced that no one disliked the publicity incidental to the Schneider Trophy race more than did the pilots themselves, but they faced it cheerfully because of the great honour bestowed upon them in choosing them to represent the British

Empire in this classic speed race. And nothing could have been finer than the team spirit which pervaded the Schneider team, nor than Webster's modesty when he declared, after winning the race, that his share in it was nothing; he was lucky in being given the fastest machine, that was all.

Looking at the matter from another point of view: The Air Ministry are reported to have expressed willingness to provide the machines but not the pilots. If the report is correct, as there seems to be no reason to doubt, presumably there is to be another "High-Speed Flight." Or can it be that as far as the formation of this specialised unit was concerned, this was only brought into being so as to smooth the feelings of those officials of the Air Ministry (we are by no means convinced that the Air Ministry are unanimous in their views) who see in all public appearances of R.A.F. personnel something very horrible. In other words, and putting it quite bluntly, was the "High-Speed Flight" only regarded as eye-wash, as a camouflage in the interests of "propriety" to excuse R.A.F. participation in the Schneider Trophy race? We should be sorry to think that the technical lessons of the building of the British challengers were not regarded in the higher circles of the Air Ministry as being of any Service value, nor the flying of them by Service officers of very direct value to the Royal Air Force. Personally we have always regarded the "High-Speed Flight" as a most important and valuable link in a piece of specialised research, the effects of which on future Service types and on the handling of them can scarcely be overrated.

The effect of withdrawing the Royal Air Force pilots from the next Schneider Trophy Race will almost inevitably be that this country will lose the race. It must be remembered that no ordinary test pilot can be spared from his regular work for a sufficient period to enable him to get in enough practice on the racing machines. That became abundantly clear after our defeat in America. To select pilots not regularly engaged upon test flying would be a costly business, even if the suggestion were adopted of attempting to raise a public fund for the purpose of defraying the expenses. Moreover, there is the question of a suitable site for training. This would almost certainly have to be a service seaplane station, and the hermaphrodite composition of a team of civilian pilots, possibly with service engineers, working at a service station would scarcely be likely to give such good results as a purely service team, all members of which were subjected to the same discipline. The whole thing has a Gilbert and Sullivan touch about it which may not have occurred

to those responsible for the decision, but which, it is to be hoped, will in the end result in a reconsideration of the whole problem.

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The Long-Range Flying-Boat

Maj. Rennie's paper on "The Long-Range Flying-Boat" proved, as we forecast last week, one of the most interesting and instructive papers of recent years. His statement of the position was, on the whole, extremely fair and unbiassed. Maj. Buchanan, in the course of the discussion, did what we consider a real service to aviation by pointing out that, up to the sizes hitherto built, the flying-boat is *not* more efficient than the corresponding landplane. Maj. Buchanan has unrivalled opportunities for examining in detail *all* designs of machines built for the Air Ministry, and, as he pointed out, no good purpose is served by overstating the case for the flying-boat. His view was that the time was coming when the flying-boat would equal and even overtake the landplane, especially in large sizes, and from that statement one may draw a considerable degree of comfort.

A good deal of the discussion which followed the reading of Maj. Rennie's paper was devoted to this particular subject. To us that seems to be quite beside the point. The flying-boat has its own particular problems, very different from those of the landplane. For Empire work the flying-boat is, it seems to us, the only logical type, and if that view be accepted, the question is not whether it is less or more efficient than the landplane, but what are its uses in Empire air work—service and civilian—and how can we best develop it. Even if the flying-boat was greatly inferior to the landplane (which, fortunately, it is not even now, and will be less so in a few years' time), we should still have to develop it to the best of our ability. It would be just as logical to argue that, as the steamer is not as fast as a railway train, we should leave the steamer alone and go "all out" for the train. The position is, perhaps, a little less obvious as regards aircraft, but that is really what it all amounts to. Each type has its uses and its limitations, and that we, a great maritime nation, should for so many years have neglected the seaplane is rather astonishing. Fortunately, the type has now received recognition, and in the future we have little fear that its detractors will be able to do the flying-boat very much harm. Maj. Rennie's paper will have done much to fix the main underlying principles, and may thus well be regarded as an important milestone on the road of flying-boat progress.

COLOURED SUPPLEMENT TO "FLIGHT," DECEMBER 8.

With every copy of this week's issue of "FLIGHT"—December 8—is presented a special supplement in five colours, on plate paper, suitable for framing, depicting the Short "Singapore" all-metal flying-boat with two Rolls-Royce "Condor" engines now being flown by Sir Alan Cobham on the Wakefield Survey Flight around Africa.

The supplement is a reproduction of an original painting by Mr. Donald Maxwell, and measures 19 by 14 in.

Our readers should see that they receive the plate. Subscribers' copies are being sent in postal cylinders under separate cover.

THE LONG-RANGE FLYING-BOAT

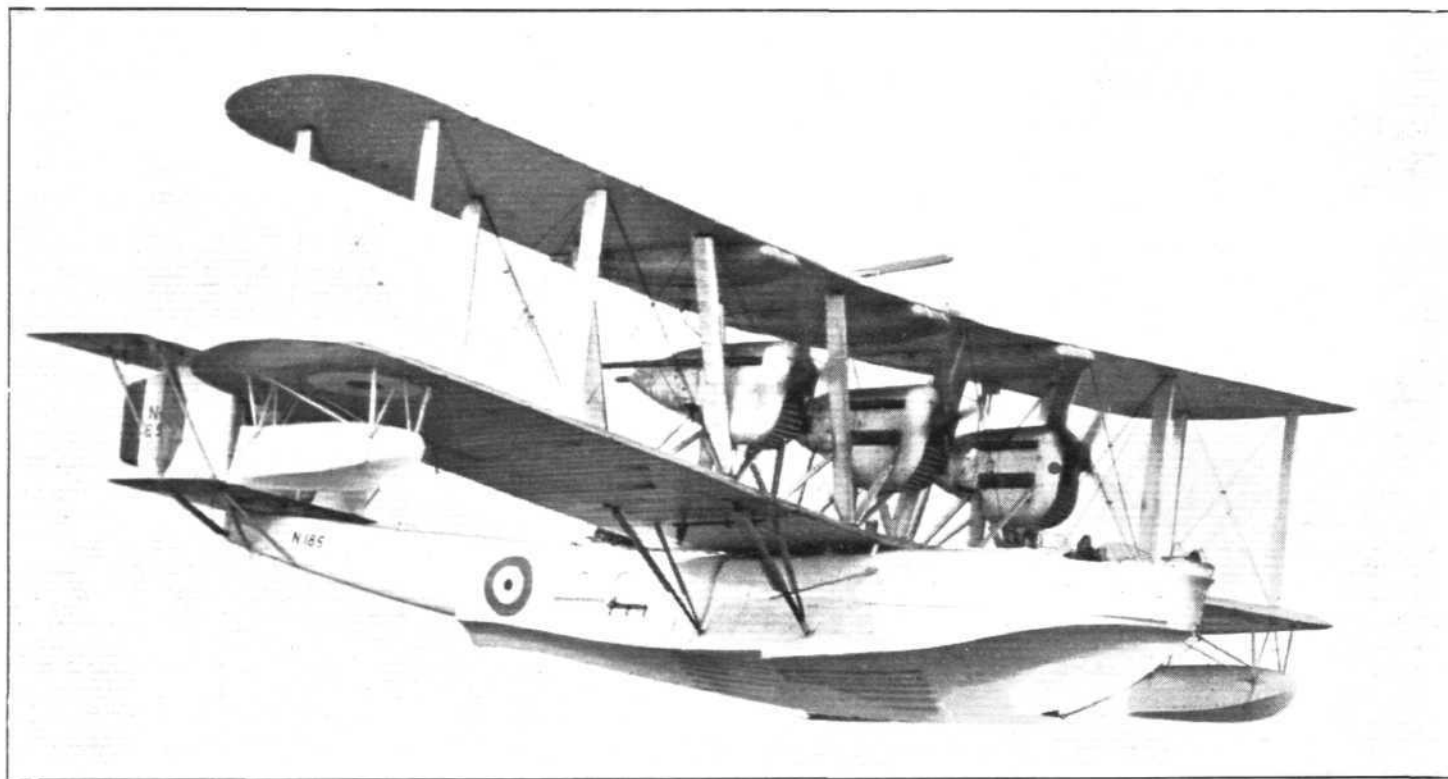
"The Problem of the Long-Range Flying-Boat" was the title of a paper read by Major J. D. Rennie, A.R.T.C., A.M.Inst.C.E., F.R.Ae.S., before the "Royal Aeronautical Society, with which is incorporated the Institution of Aeronautical Engineers," on December 1. Col. the Master of Sem-pill was in the chair, and in introducing the lecturer, recalled that the last time Major Rennie had lectured to them was in 1923.

A film was then shown of the Blackburn "Iris I" and "Iris II," and of the start of the flying-boat cruise to the Baltic last summer. The lecturer then read his paper.

The introductory remarks of Major Rennie were devoted to a consideration of the interdependence of range, load factors and pay load for various ranges and power loadings without reference to the design possibility or practical utility of the aircraft. Taking as his starting point a three-engined flying-boat fitted with Rolls-Royce "Condor" engines, and of a gross total weight of 29,000 lb., with load factors of 4 for cp. forward and back positions, the lecturer gave a

Both these power loadings would represent overloading, the normal power loading being about 14 lb./h.p. For this normal power loading, it is of interest to find that the paying load for 1,000 miles' flight would still be a little over 1½ lb./h.p., while for 400 miles it would be about 3.5 lb./h.p. (The lecturer did not mention the fact, but it is interesting to note that a service from Harwich to Hamburg, for instance, is of about 400 miles, and thus could be carried out without overloading the machine at all with a paying load of about 3½ lb./h.p., and presumably would, therefore, be able to operate on practically any day in the year.)

It should be clearly understood that the foregoing considerations related to range, useful load and power loading entirely without questioning the practicability of any boat to meet a specification, and was intended merely to show what sort of ranges and paying loads might be obtained if the practical considerations of the design were found to be feasible. To examine these factors in turn was the object of the paper proper.



["FLIGHT" Photograph]

THE BLACKBURN "IRIS I": A wooden flying boat, this machine is fitted with three Rolls-Royce "Condor" engines. Note the sharp Vee bottom forward.

set of curves of gallons of fuel, range in miles, percentage weights of fuel and tanks, and main plane load factors for various gross weights and load factors. The weight of the machine without fuel, but including weight of crew, wireless, and all necessary instruments, was assumed to be 18,100 lb. Taking as examples the distances from Plymouth to Newfoundland and Plymouth-New York, 2,500 miles and 3,500 miles respectively, the curves showed that for the former flight the gross weight would have to be 35,000 lb., with the load factor reduced to 3.3 and the power loading increased to 17.5 lb./h.p. For the Plymouth-New York flight the gross weight would have to be 42,000 lb. (as against the normal of 29,000 lb.), and the load factor would be reduced to 2.8, while the power loading would be increased to 21 lb./h.p. Under suitable sea and weather conditions it was assumed that these flights would be possible.

Taking the same machine, and assuming a structure weight of 37 per cent., Major Rennie gave curves showing the relation between range and useful (i.e., paying) load per h.p. for various power loadings. From these curves it emerged that, assuming that the boat would handle properly under normal operational conditions with, for instance, a power loading of 16 lb./h.p., the pay load for 1,000 miles would be about 3 lb./h.p., and for 400 miles about 5 lb./h.p. Similarly, if the power loading could be increased to 18 lb./h.p., the paying load for 1,000 miles would be just over 4 lb./h.p., and for 400 miles 6 lb./h.p.

Water Performance

In dealing with the problems and factors which must be given careful consideration in the lay-out of a design for a long-range flying-boat operating under known weather and sea conditions, Major Rennie divided his paper into two parts: water performance and air performance. Under the former, the lecturer defined seaworthiness as follows: "A boat is seaworthy if it remains so while on the water, and when in the air is airworthy, and is able to alight in a seaworthy condition and still be airworthy." The requirements for seaworthiness could easily be met under normal load and favourable sea conditions, but when sea and air conditions were unfavourable, and/or the boat overloaded, the difficulties commenced. "In this respect," Major Rennie stated, "so far as hull form affects seaworthiness, the great majority of modern flying-boats are inferior to the 'F' boats developed by the late Commander J. C. Porte, R.N., during the late war. This defect is probably the result of lack of knowledge of the experience gained in the development of these and other boats during this period, and to the acceptance of tank test results as providing sufficient data on which to base the design without regard to the full-scale requirements." The lecturer proceeded to explain that tank tests on models should be carried out both for normal load condition and for overload conditions. After a brief reference to the Blackburn "Iris," which machine was taken as his basis in most of the estimates

and calculations (although he did not say so), the lecturer concluded that a flying-boat *could* be designed suitable for operating under most conditions likely to be met with in which flying might be considered reasonably free from risk. He also called attention to the importance of good seamanship, and stated that a seaworthy boat might be lost or badly damaged due to bad seamanship. Thus the importance of training pilots in the art of seamanship could not be too strongly emphasised.

The effects on time and run to take-off of taking-off speed and horse-power loading were dealt with next. For a machine of 27,500 lb. gross weight, fitted with three Rolls-Royce "Condor" engines, curves were derived showing that if the take-off speed was increased from 45 to 55 knots, the time to take off was increased by 10 seconds, and the length of run by 100 per cent. Looked at in another way this meant that in a rough sea twice as many waves would be encountered during take-off, thus doubling the risk of damage. Assuming these curves to be reasonably accurate, it was seen that for the same power loading the time to take-off was nearly proportional to the square of the take-off speed, and the length of run to the cube of the take-off speed.

Taking as an example the same machine as above, the effect of power loading was examined at a take-off speed of 50 knots, and it was found to be approximately the same as that of take-off speed. For a power loading of 13.7 lb./h.p. the time was 22 seconds, and the run 1,100 ft. For a power loading of 16.1 lb./h.p. the time was 38 seconds, and the run 2,000 ft.

Air Performance

Major Rennie stated that the ever-increasing demand for longer range had very naturally been followed up by an equally insistent demand for high cruising speed in order to reduce duration of flight for a given range. It had, he said, been stated that this might be attained solely by the process of "cleaning up" a design. Defining cruising speed as "the speed at which air miles per gallon are a maximum," the lecturer pointed out that this occurred when

$$\frac{\eta L/D}{p} \propto \frac{375}{W} \times \frac{f(p)}{\rho}$$

was a maximum; where η = the propeller efficiency at cruising speed; L/D = the lift/drag ratio at this speed; W = the weight of aircraft; $f(p)$ the b.h.p. altitude correction factor; ρ the density at altitude; and p = the rate of fuel consumption at sea level. For purposes of illustration Major Rennie took a three-engined biplane flying-boat of gross weight 17,000 lbs., fitted with three air-cooled engines developing 450 h.p. at 1,700 normal r.p.m., carrying 500 gallons of fuel and having a stalling speed of 55 knots, with R.A.F. 28 wing section. He then examined the effect on range and cruising speed of aspect ratio, take-off speed, and increase in top speed, due to "cleaning up." Three sets of curves illustrating these effects were shown. The first of these showed horse-power required against speed for various aspect ratios, ranging from 4 to 12, the speed corresponding to the former being 68 knots, and to the latter 62 knots, while the respective minimum horse-powers required were 620 and 400. The next illustrated the relation of range to cruising speed at various aspect ratios, the range being about 690 sea miles at 98 knots for aspect ratio 4 and 860 sea miles at 84 knots for aspect ratio 12. (Intermediate values were given on the graph.) In the third figure of this series curves of aspect ratios were plotted on speed against L/D of machine. A maximum L/D of nearly 9 was reached for aspect ratio 12 at 70 knots, and L/D of just over 6 for aspect ratio of 4 at 85 knots.

Leaving now the 17,000 lbs. boat and returning to the previous example taken, but with a gross weight of 27,500 lbs. and 900 gallons of petrol, Major Rennie gave curves illustrating effect of take-off speed on range and cruising speed, using take-off speeds of 45, 50 and 55 knots. First curves of range against throttled level speed for the three take-off speeds, the maximum, range being 1,230 sea miles at 63 knots for 45-knot take-off speed, 1,190 miles at 67 knots for 50 knots take-off speed, and 1,130 miles at 73 knots for 55-knot take-off speed. Then curves of range against r.p.m. and curves of r.p.m. and cruising speed against take-off speed. And, finally, $\eta L/D$ and η against speed for the three take-off speeds. The curves showed that as the take-off speed increased from 45 to 55 knots the cruising speed increased by about the same amount, but the range at the higher speed decreased about 8 per cent. On the other hand, the r.p.m. had gone up from 1,500 to 1,670. The curves of range against throttled level speed were fairly flat,

and the lecturer pointed out that to reduce duration of flight it would obviously pay to fly at a throttled speed considerably higher than the cruising speed, provided the engines could maintain the required higher revolutions for long periods. For example, in the case of the 55 knots take-off speed, the cruising speed could be increased from 73 knots to 80 or 85 knots, with little loss in range, if the engines could maintain 1,750 and 1,900 r.p.m. respectively.

In order to examine the effect of a reduction in body drag the lecturer continued the calculations for the case of a take-off speed of 50 knots, and assumed the body drag reduced by 50 per cent., a figure not easily attained in practice and thus setting an upper limit. The effect of this reduction in body drag was to increase the top speed from 100 knots to 119 knots, the cruising speed from 67 knots to 75 knots, and the range by about 30 per cent.

Major Rennie now turned from the subject of aircraft design to that of the effect of any reductions in fuel consumption which might be possible by improvements in the power plant. He pointed out that the efficiency, as far as range and cruising speed were concerned, could be measured in terms of fuel consumption throttled and the ability to run for long periods at at least 90 per cent. of normal revolutions. Comparing average consumptions without mixture control with consumption given by high-compression Rolls-Royce "Condor" engine it was found that there was little change in cruising speed, but the range for the same fuel capacity was increased by about 20 per cent., or about the same improvement as was likely to be obtained by aerodynamic means. Another figure showed that if the specific consumption could be reduced from 0.5 pts. b.h.p./hr. to 0.45 pts. b.h.p./hr., the range could be increased by nearly 20 per cent. for the same fuel capacity (900 gallons).

The lecturer said that little information was available as to the service likely to be obtained from an engine running for lengthy periods at from 90 per cent normal revolutions to normal revolutions. It would be helpful if engine constructors would come forward with some definite information on this point.

The concluding sections of Major Rennie's paper dealt with propellers, of variable pitch or otherwise, ease of control to avoid fatigue, fuelling on the water, and, finally, twin-engined or three-engined boats, the general uses of the flying-boat in commerce. He concluded that, other things being equal, the success or otherwise of any proposed flying-boat line would depend almost entirely on the correct choice of take-off speed and power loading for the known conditions.

The Discussion.

THE CHAIRMAN (COL. THE MASTER OF SEMPILL) said he would heartily endorse Major Rennie's plea for support for the neglected flying-boat. He was glad that from a technical point of view the position was so good in this country, and that was in a large measure due to people like the lecturer. He felt sure that if there was a future for Imperial air routes by heavier-than-air craft, then that future would lie with the flying-boat.

MAJOR BUCHANAN expressed his appreciation of the excellent work which Major Rennie was doing, and said he did not wish to be misunderstood when he offered certain criticisms. He was, personally, a strong supporter of the flying-boat, and thought the time would undoubtedly come when it could hold its own as against the landplane. That time, however, was not yet. He had, perhaps, greater opportunity than any other man in this country for examining in great detail the design of all types of aircraft, and as a result of this intimate knowledge, he had to point out that the flying-boat, in any size hitherto built, was heavier than the landplane, and was also less efficient. No good purpose was served by overstating the case for the flying-boat. Concerning the statement made by the lecturer, that the old "F" boats were more seaworthy than modern flying-boats, he saw there were a number of flying-boat pilots present that evening, and they would probably have something to say on that subject. To him it was rather strange that Major Rennie should, in spite of this view, have designed in the "Iris" a boat which differed as much as possible from the "F" boats. Reference had been made to the use of landplanes for long overseas flights, such as transatlantic flights, etc. That was probably due not so much to a preference for the landplane as to the fact that the flying-boat cost a great deal more. In conclusion, he expressed the view that the future of the large machine would lie with the flying-boat.

MR. PIERSON spoke on the relative efficiency of large landplanes and large flying-boats. The land machine was handicapped by various things such as having to have a lower

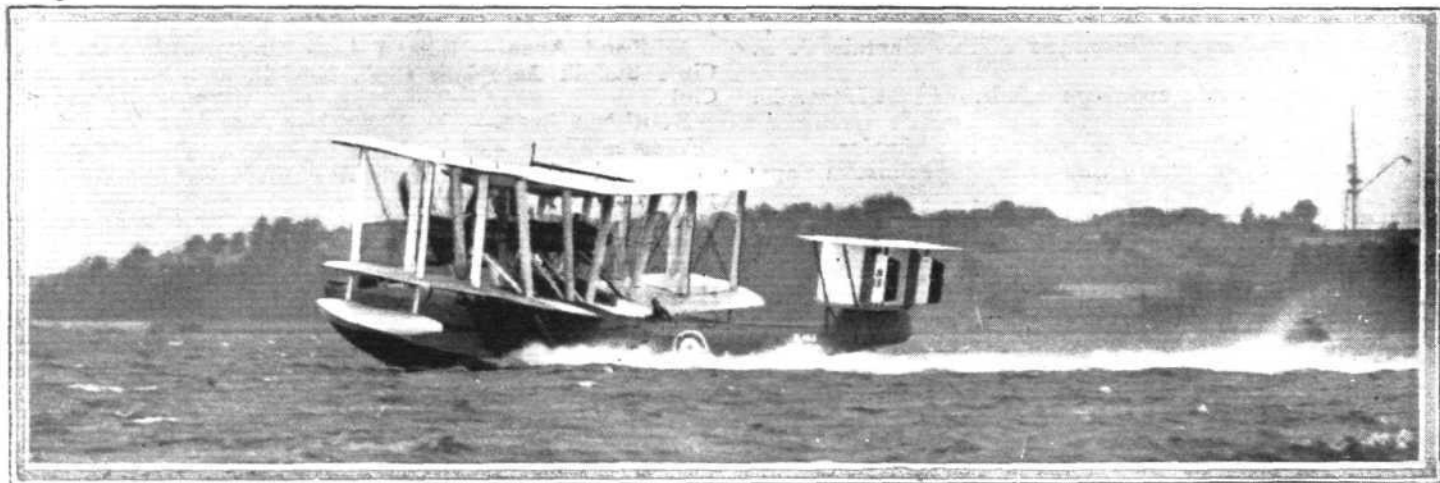
landing speed, folding wings, etc. This all added to the structure weight.

WING-COMMANDER MAYCOCK said he would like to bring up once more the old subject of seaworthiness. The lecturer had tried to define it, but he thought the definition could be put still more briefly. A clear definition was badly wanted, and he would repeat what he had said on a previous occasion: that seaworthiness was of two kinds, which he would call A and B. Under A came seaworthiness when handling the boat on the water, such as in taxiing, towing and when moored. Under B came the problems of taking-off and alighting. His own view was that we were going a little too fast as regards B. The only time when a boat was really required to get off a rough sea was after a forced landing. Before attempting to design for this, it would, he thought, be better to devote attention to other things of more immediate importance. He called attention to the fact that already boats were so seaworthy when moored that at times it was impossible to get on board them from a motor-boat or dinghy. The wings got in the way, and designers might usefully devote their attention to this subject. The lecturer had referred to the need for seamanship. He (Wing-Comdr. Maycock) preferred to call that quality "marine airmanship." They had had experience of what sailors with seamanship could do to a machine (Laughter). He thought if a satisfactory type of slot could be evolved, that would be a great help in flying-boat work, because it would give that control which now they feared to lose, if thrown off the water by a wave.

same could be done in other branches of aeronautics, the knowledge would become widespread instead of being the property of a few specialists. He deprecated the loose use of the term "cruising speed." What they were really after was range speed, which was a very different thing. In practice cruising speed was not the most economical speed but an arbitrary speed chosen by the pilot to suit his own convenience and comfort. He did not know whether or not figures were available concerning fuel consumption in flight as distinct from test bench figures. If they were, they would be interesting. Certainly practical experience did not bear out the consumption figures given in the paper. If some new form of consumption control was to be introduced, he pleaded that it should be made automatic.

SQUADRON-LEADER HAIGH wished to ask one or two questions. On the subject of the curves for aspect ratios, he would like to know whether change in structure weight had been taken into account. Also, as cruising speed decreased with aspect ratio, would it not be possible to cross-plot in such a way as to read off direct the aspect ratio suitable for a given range. On the subject of fuel consumption, he would suggest that the use of oil engines would pay, since with them they could get down to consumptions as low as 0.36 lb./h.p./hr.

SQUADRON-LEADER ENGLAND said Wing-Commander Maycock had practically taken the words out of his mouth by speaking on the subject which he (England) had intended to bring up, namely, that of slots. He would add that not only



["FLIGHT" Photograph

THE BLACKBURN "IRIS II" : Generally similar to the "Iris I," this flying-boat has an all-metal hull. Our photograph shows the machine taking off at Felixstowe at the start of the Baltic Cruise last summer, with Sir Samuel Hoare, Secretary of State for Air, on board. Note the exceptionally clean running. The three engines are Rolls-Royce "Condors."

MAJOR BARLOW said what had struck him in the paper was the outstanding features of cruising speed and range. Cruising speed depended on L/D , η , and petrol consumption. L/D threw back the cruising speed. That was shown in the curves. η led to higher cruising speeds, while fuel consumption (at 90 per cent. of full power) led to still higher cruising speeds. The high cruising speed reduced the range. Very little could be done by reducing body drag. He personally wanted to go for the carburettor man. It was disheartening for a designer to give of his best in getting out a machine and then find his effort largely nullified because the carburettor wasted 20 per cent. of the power. What was wanted was a carburettor that would give the same consumption over the whole throttle range. In short, the best consumption must coincide with the best cruising speed.

COMMANDER BRIGGS said he had a communication from Mr. Rowledge on the points raised by the lecturer in connection with consumption. The possibilities of fuel reduction were greater than stated by Major Rennie. The problem was solved as regards the engine, but it still remained to be solved under actual service in a machine. Personally, his view was that 90 per cent. of normal to normal was the speed at which an engine should be run. The variable pitch airscrew was important, and was now in sight, but if it failed to materialise, then a two-speed gear-box was available.

MAJOR LEDEBOER expressed his indebtedness to the lecturer for having, for the first time it had been done as far as he knew, stated clearly the first principles of the problem. If the

control slots but also lift slots would be of great advantage in a flying-boat, as they would enable lower speeds to be attained. He referred to the question of seaworthiness, and to the fact that usually, after a forced landing in a rough sea, the lower plane got smashed up in 20 mins. He was a bit uncertain how pilots measured 8 ft. waves, which were supposed to be not outside the capabilities of a modern boat for taking off. Usually propellers got smashed in taking off in a rough sea. The whole problem in the end seemed to come down to one of engine reliability against seaworthiness. He had been interested in the film shown, and especially in the flat angle of the hull. With older flying-boats it had been found desirable to enable the hull to be trimmed back to an angle of 16 or 18 deg. In the early days of the flying-boat there was one in which this could be done and that machine was very much more seaworthy than others in which such a large angle could not be attained.

MR. WYN-EVANS said he would prefer that evening to confine himself to general questions. He had, he said, recently been privileged to see the outline drawings of a new type of flying-boat in which the stability on the water did not depend on wing tip floats. In fact, for docking purposes the wings could be removed from the centre-section, leaving the hull to be docked in the ordinary way. By such arrangements all the existing harbours of the world would become available to flying-boats. The Airworthiness Department at Farnborough had recently been requested to examine the possibilities of further lightening the metal hulls of flying-boats,

and although he was not prepared to go into details at the moment, he could say that although the examinations were not completed, already it had been found that further lightening of hulls was to be expected. The subject of plate area was important, and he pleaded for the use of smaller areas, especially where the surface was fairly flat. One way of doing this was to increase the number of stringers. In other words, have light stringers placed close together rather than heavier stringers far apart.

MR. LANKESTER PARKER said he had not expected to be called on to take part in the discussion. There were one or two questions he would like to ask. Sqdn.-Ldr. Haigh had already asked whether the effect of aspect ratio on structure weight had been taken into account. He would like to know

whether the effect of landing speed on structure weight had been taken into account.

CAPT. SAYERS said he had been struck by what appeared to be a rather startling discrepancy. In an article in *FLIGHT* Mr. Gouge of Short Brothers had come to the conclusion that take-off was directly proportional to the take-off speed, while Major Rennie found that it was proportional to the cube of the take-off speed. Possibly the explanation might be found to be that whereas Major Rennie's machine was nowhere near the limit of its load, Mr. Gouge was working close to that limit.

MAJOR RENNIE said that in view of the technical nature of the subjects raised in the discussion, he would prefer to reply to them in writing later, for publication in the *Journal*.

THE ROYAL AERO CLUB OF THE U.K.

OFFICIAL NOTICES TO MEMBERS

ROYAL AERO CLUB ASSOCIATED CLUBS GENERAL COUNCIL

THE first meeting of the General Council was held at the Royal Aero Club, 3, Clifford Street, London, W.1, on November 29. Brig.-General Lord Thomson, P.C., C.B.E., D.S.O., the Chairman of the Royal Aero Club, occupied the Chair, and the following delegates were present:—

Royal Aero Club.—Lt.-Col. M. O. Darby, O.B.E., Lt.-Col. Sir Francis K. McClean, A.F.C., Lt.-Col. M. O'Gorman, C.B., Mr. F. Handley Page, C.B.E.

Bristol and Wessex Aeroplane Club.—Captain C. F. Uwins.

Felixstowe Light Aeroplane Club.—Flight-Lieut. N. Comper.

Halton Aero Club.—Flying-Officer W. F. Shaylor.

Hampshire Aeroplane Club.—Mr. R. J. Parrott, Capt. Harrington.

Lancashire Aero Club.—Mr. J. F. Leeming, Mr. A. R. Goodfellow.

London Aeroplane Club.—Major K. M. Beaumont, D.S.O., The Hon. Lady M. Bailey.

Midland Aero Club.—Major G. Dennison.

Newcastle-upon-Tyne Aero Club.—Colonel Sir Joseph Reed, Mr. B. M. Dodds.

Norfolk and Norwich Aero Club.—Captain G. F. Lines.

Nottingham Aero Club.—Mr. C. R. Sands.

Royal Aircraft Establishment Aero Club.—Mr. P. N. G. Peters.

Suffolk Aeroplane Club.—Dr. Sleigh.

Yorkshire Aeroplane Club.—Mr. N. S. Norway.

The principal question for discussion was the Racing Programme for 1928. The opinion was generally expressed that the Clubs found great difficulty in supporting the large number of Meetings held in 1927, and it was thought desirable that for 1928 the Programme of Inter-Club Meetings should be considerably reduced. In order to put this into effect it was decided to allocate one Meeting to definite areas, as follows:—

Northern Area.—Lancashire Aero Club, Yorkshire Aeroplane Club, Newcastle-upon-Tyne Aero Club.

Midland Area.—Midland Aero Club, Nottingham Aero Club, Suffolk Aeroplane Club, Norfolk and Norwich Aero Club.

Southern Area.—The Hampshire Aeroplane Club.

Western Area.—Bristol and Wessex Aeroplane Club.

London Area.—The Royal Aero Club, The London Aeroplane Club.

A Sub-Committee of Representatives of the following Clubs were appointed to make the necessary arrangements:—

The Lancashire Aero Club, The Midland Aero Club, The Hampshire Aeroplane Club, The Bristol and Wessex Aeroplane Club, The London Aeroplane Club.

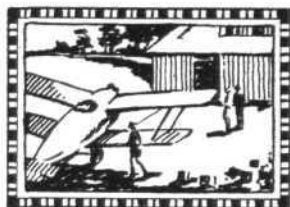
Vice-Chairman of Council.—Colonel Sir Joseph Reed, President of the Newcastle-upon-Tyne Aero Club, was unanimously appointed Vice-Chairman of the General Council for 1928.

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W.1.
H. E. PERRIN, Secretary.



CROYDON AERODROME IMPROVEMENTS: Good progress is being made with the "new" London Terminal Aerodrome, as our picture above of the new buildings indicates. On December 9, Sir Samuel Hoare is opening the new road, Forester's Drive, which replaces Plough Lane, the road bi-secting the aerodrome and which will be closed at the same time.

PRIVATE



FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

ACTIVITIES OF THE "WIDGEON" MONOPLANE

SINCE the Westland "Widgeon III" emerged from a thorough experimental stage it has become prominent in the light 'plane class, and is successfully active in many ways. Sir Sefton Brancker made a recent tour in one lasting a few days, flying through the East and North of England, and visiting various light 'plane clubs. Capt. Paget, A.F.C., the new Westland test pilot, was the pilot, and he met Sir Sefton Brancker at Hendon at 3.15 p.m. on November 9. The first stage took them to the R.A.F. Aerodrome at Duxford in 35 minutes. The distinguished passenger lectured that evening to the Cambridge University Aeronautical Society on "Air Transport."

He described all the European air routes, of which nobody can have had more experience, or of the air lines throughout the whole world; and gave a general survey of Great Britain's efforts in the Colonies with illustrating figures of speeds, costs, petrol consumption, etc., for to-day and those of eight years ago.

At 9.30 a.m. the next day the monoplane took off for Norwich, and snow and low clouds were encountered on the way, but the machine behaved well in the bad weather. A landing was made at Mousehold Aerodrome an hour after. Here Sir Sefton had a conference with the chairman and members of the Norwich Club. Half-an-hour later the tour was resumed in a blinding snowstorm, which remained with the machine until it reached King's Lynn, when the clouds dispersed and a rather weak and watery sun made an apologetic appearance. The strut thermometer was registering 10 degrees of frost. Owing to the prevailing northerly

wind blowing across them it took the air tourists 2 hrs. 5 mins. to reach Hucknall, near Nottingham.

They were met by Sir Albert Ball and Mr. David Rushworth, the chairman of the Nottingham Aero Club, and were driven into Nottingham for lunch. At 3.30 in the afternoon they ascended again and flew north to Sherburn, the home of the Yorkshire Club. The following day Capt. Paget gave joy-rides and demonstration flights in the monoplane here, and the machine created a very favourable impression.

On Saturday, November 12, he flew Sir Sefton Brancker straight back to Hendon, a distance of 197 miles, in 1 hr. 40 mins. This completed the tour, during which the "Widgeon III" had not given the slightest trouble. The Director of Civil Aviation declared that for trim, general comfort, and luggage space, the Westland machine was very hard to beat.

The remarkable performance of this light aeroplane has, in fact, roused interest overseas, and as a result the Port Elizabeth Flying Club has placed an order for one, and this will leave England immediately. This club is new, extremely energetic, and is likely to meet with every success. Its choice of machine is bound to be an asset.

A foreign order was received from the Argentine, and a "Widgeon" was recently shipped to the new Villa Lugane Flying School there, where it is to be used as a "finishing" machine for the pupils.

Lady Bailey paid a visit to Westland lately in her D.H. "Moth" and tested a "Widgeon."

Sqdn.-Leader the Hon. R. A. Cochrane, A.F.C., who contributed a very interesting article in these columns a few



THE WESTLAND "WIDGEON" ABROAD: These three views were taken in Australia at the christening of the "Widgeon" which was shipped to Brockway Motors, Ltd., Australia, who have included the sale of light aeroplanes as a branch of their motor business. This particular machine was entered by them in the Queensland Aerial Derby Speed Championship Cup Race on November 12, and it won the prize.

weeks ago on his European tour in a Westland monoplane, was due to lecture on the same subject this session before the Westland Aircraft Society, whilst another lecturer will be Mr. "Harold Brooklyn," who owns a "Widgeon."

The Westland Aircraft Company have issued an interesting specification which explains their monoplane in all the plain detail that a prospective purchaser would like to know. It sets forth briefly the advantages of the monoplane over the

biplane, and describes the construction of the fuselage, wings and engine installation. There are neat illustrations, whilst enclosed is a specification of the A.D.C. "Cirrus" engine with which the "Widgeon" is fitted, although it is equally adapted to the Armstrong-Siddeley "Genet," but at a slightly higher cost. There is also a pamphlet on the Scaco air cushions which are fitted in the machine as standard equipment.

ORGANISING A NEW CLUB

AN East Kent flying club has been chosen out of many applicants for inclusion amongst the new light aeroplane clubs to receive the benefit of the Air Ministry's latest form of subsidy. The conditions of this are that a grant of £50 is paid to a club when each member qualifies for a pilot's "A" or "B" licence on the club's machines, and £1 10s. for every hour's flying carried out by the pilot up to a maximum of 20 hours in any year except that during which the qualification was made. Also £10 is paid in respect of each member holding either licence which is not in force on the previous January 1; this sum to be used for the sole purpose of purchasing equipment. The most a club can receive in a year is £2,000.

The Air Ministry approved of the E.K.F. Club's estimated balance sheet for a year's working, which showed that £1,000 was required to commence operations; leaving a margin for contingencies. It is thought by the club that with ordinary luck there would be sufficient profit at the end of the first year to buy a second machine, and then they optimistically assume an even larger profit in the second year because two machines are a better financial proposition than one, as no additions are necessary to the personnel. Finally, it is considered that by the third year, when the subsidy ceases, self-support will be assured.

An initial capital of £1,000 will be required apart from entrance fees and subscriptions, and to obtain this it is proposed to form a limited company to which the public will be invited to give donations in return for fully-paid shares in the company.

These shareholders would have a natural influence in the controlling of the club but would be quite distinct from the

members and, although having access to the aerodrome at all times, subject to Air Ministry approval, they would not be entitled to use the members' club room. They would receive free admission to any displays or air race meetings, however.

The directors would consist of the president of the club, three members elected by shareholders, and three flying members chosen by other flying members. Possession of one share would qualify any of these people to hold office as president. No salary would be drawn by the directors.

An entrance fee of two guineas and a subscription fee of five guineas will be charged flying members, for which they will have the usual social advantages, and tuition and solo flying. Concerning the third degree of membership, ground members, the club thinks that in the circumstances these would be better served by taking up some of the 1,000 £1 shares and thereby having some control on the policy of the club rather than pay the usual two guinea entrance fee for the mere status of a ground member.

Present assets amount to the use of Lympne aerodrome, with accommodation for three machines, at a nominal rent of £5 per annum; and 85 enthusiasts who wish to become flying members besides seven others who aspire to other degrees of nomination. Preliminary expenses are being met by a small sum which has been collected. Finally, the prospective asset is in the goodwill of the enterprising people of East Kent!

Shareholders are not assured of dividends, though even these are not thought impossible after three or four years' work.

At the last meeting of the club it was proposed that Sir Charles Wakefield be appointed President, and this was carried unanimously.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.

Bristol and Wessex Aeroplane Club, Yate, Gloucester. Secretary, Lieut.-Col. C. Fleming, Filton Aerodrome, Patchway.

Hampshire Aero Club, Hamble, Southampton. Secretary, Maj. Ross White, Hamble, Southampton.

Lancashire Aero Club, Woodford, Lancs. Secretary, C. J. Wood, Oakfield, Dukinfield, near Manchester.

Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-upon-Tyne Aero Club, Cramlington, Northumberland. Secretary, A. H. Bell, c/o The Club.

Norfolk and Norwich Aero. Club, Mousehold, Norwich. Secretary, H. O. Bennett, 5, Opie Street, Norwich.

Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria Street, Nottingham.

The Scottish Aero Club Movement, 101, St. Vincent Street, Glasgow. Secretary, Harry W. Smith.

Suffolk Aeroplane Club, Ipswich. Secretary, Courtney N. Prentice, "Hazelde," Stowmarket, Suffolk.

Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, D. M. N. Coles, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for the week ending December 4.—Flying time, 7 hrs. 20 mins. Dual instruction, 4 hrs. 10 mins.; solo flying, 3 hrs. 10 mins.

Dual instruction.—With Capt. F. G. M. Sparks: J. A. Simpson, J. J. Hofer, H. M. Samuelson, Capt. H. Square, J. Barros. With Capt. S. L. F. St. Barbe: Miss Wilson, C. Dugdale.

Solo Flying.—J. A. Simpson, J. J. Hofer, H. M. Samuelson, D. H. P. Esler, E. C. T. Edwards, Capt. H. Square, H. Solomon, O. J. Tapper.

The rain and fog during the week prevented all flying except for a few hours on Thursday and Friday.

Return of flying for the month of November.—Dual instruction (60 flights), 27 hrs. 25 mins.; solo flying (69 flights), 28 hrs. 15 mins.; passenger flying (17 flights), 4 hrs. 20 mins.; test flights (44 flights), 7 hrs. 20 mins. Total, 67 hrs. 20 mins.

BRISTOL & WESSEX AEROPLANE CLUB

REPORT for week ending December 3.—Total flying hours, 8 hrs. 40 mins. Instruction, 4 hrs.; soloists, 4 hrs.; passengers, 40 mins.

Instruction (with Mr. E. B. W. Bartlett): Messrs. Arnold, T. H. Clarke, Roberts, R. A. Hall, Hon. C. L. Bathurst.

Soloists under instruction: Messrs. Hon. H. C. H. Bathurst, R. A. Hall, C. H. Brewer, S. K. Jopp, Roberts.

"A" Pilots: Capt. Barnwell.

Passengers with Mr. E. B. W. Bartlett: Mr. G. K. Hampshire, Mr. Dougall, With Mr. Tapp: Mr. Roe.

HAMPSHIRE AEROPLANE CLUB

REPORT for week ending Sunday, November 27.—Only 6 hrs. flying was possible this week, owing to fogs, but Mr. Baynes succeeded in doing a very excellent first solo.

On Friday, Lady Bailey visited us in her Moth, and spent most of the day at the club; apart from this, there is little news to report.

The following members had instruction:—Lieut. Mandeville, R.N., Messrs. Baynes, Dickson and Lowe-Wylde.

The soloists were Don J. de la Cierva, Lieut. Graham, R.N., and Stanford, qualified pilots; and the following unlicensed soloists: Messrs. Fawkes and Baynes.

A dance took place in the clubhouse on Saturday evening, and quite a merry time was enjoyed by the participants.

REPORT for week ending December 4.—Total flying time, 6 hrs. 50 mins. Instruction, 4 hrs. 30 mins.; solo, 1 hr. 50 mins.; joy rides, 10 mins.; test flights, 20 mins.

No flying was possible on Tuesday, Wednesday or Saturday, owing to mist, and on the remaining days a thick haze made flying difficult.

The following members had instruction: Capt. Kirby, Lieut. Mandeville, R.N., Messrs. Lowe-Wylde, Evans, Fawkes, Hall and Courtney.

The soloists were:—Licensed—Lieut. Graham, Lieut. Oliver, and Mr. Falconer. Unlicensed—Capt. Kirby, Mr. Fawkes, and Mr. Evans.

Mr. Storey had a joy ride with Flight-Lieut. Thomson and Mr. Oliver, Senior, with Lieut. Oliver.

We sent off two more soloists during this week, Capt. Kirby, M.M., and Mr. Evans, both up to the usual form.

There is no news to report this week, but we would like to congratulate Mr. Falconer on his stout effort in bringing GE-BOH back into the aerodrome after his engine had developed piston trouble on Sunday. Mr. Falconer flew his first solo only fairly recently, but in spite of the disconcerting circumstances on Sunday, he made an excellent approach and landing.

NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending December 4.—Total flying time, 13 hrs. 20 mins. Instruction, 8 hrs. 45 mins.; soloists, 20 mins.; "A" pilots, 3 hrs. 35 mins. tests, 25 mins.; passengers, 15 mins.

Instruction (with Mr. Parkinson: Miss Rambaut, Dr. Alderson,

Messrs. Horn, V. Heaton, Griffiths, R. J. Dickinson, De Pledge, P. L. Lawson, Waugh.

Soloist: Mr. De Pledge. "A" pilots: Mrs. Heslop, Miss Leathart, Messrs. R. N. Thompson, C. Thompson, Wilson, Turnbull. Passenger (with Mr. C. Thompson): Mrs. Heslop.

Fog has been almost continuous throughout the week, the flying having all been carried out during slight improvements on three days.

NORFOLK & NORWICH AERO CLUB

REPORT for week ending December 4.—Total flying time, 6 hrs. 30 mins.

Instruction.—With Capt. Lines: Messrs. G. F. Meagne, R. F. Potter, G. H. Barber, J. Barratt, C. F. Surtees, N. Brett.

Soloists.—Messrs. W. P. Cubitt, W. A. Ramsey, F. Gough.

Passengers.—E. Varden-Smith.

NOTTINGHAM AERO CLUB

REPORT for week ending December 2.—Total flying time, 8 hrs. 55 mins. Dual, 6 hrs. 55 mins.; solo, 1 hr. 55 mins.; passenger, 5 mins.

Instruction with Mr. Martin:—Messrs. Blake, Calladine, Whitby, Cox, Wilcox; Hallam and Sands.

Solo ("A" Licence):—Mr. Ball. Solo (under instruction):—Messrs. Hallam and Sands.

Passenger (with Mr. Martin):—Mr. Florance.

Sunday and Monday last week were absolutely dud but the remainder of the week, except for bad visibility, was passable.

On Thursday, December 1, Mr. Chas. Blackburn with Capt. Blake, paid us a short unofficial visit with the "Bluebird" that they are demonstrating and we are looking forward to the official visit and an opportunity of examining the machine thoroughly.

SUFFOLK AEROPLANE CLUB

REPORT for week ending November 27.—Flying time, 3 hrs. 50 mins.

Instruction.—With Mr. Lowdell: Miss Edwards, Dr. Sleigh, Messrs. F. Jolly, G. Hutley, S. Schofield, T. Marriage, K. Peck.

Passenger.—With Mr. Lowdell: F. Verney. With Mr. Prentice: S. Schofield.

Soloists.—Dr. Jas. Sleigh, S. Schofield, C. N. Prentice.

Mr. Charles Blackburn and Capt. Blake, on their "Aerial Tour," called at the aerodrome on Wednesday last, flying Bluebird G-EBTA. The engine of this machine is fitted with an exhaust manifold and pipes which is a marked improvement. One had an opportunity of flying the machine, also of sampling the excellent Yorkshire beer of which there was an ample supply in the locker.

We are now launching a public appeal through the local press for further funds to enable us to secure a second machine and hangar. Lady Bailey and Sir Courtenay Warner (Lord Lieutenant of Suffolk) have very sportingly headed the list with £100 each.

Flying has been practically washed out this week owing to continued fog.

REPORT for week ending December 4.—Flying time, 4 hrs. 50 mins.

Instruction.—With Mr. Lowdell: Miss Edwards, Dr. Jas. Sleigh, S. Schofield, K. Peck, G. Hutley, N. Creasy, H. Billinton.

Soloists.—Dr. Jas. Sleigh, S. Schofield, C. N. Prentice.

Passenger.—With Mr. Prentice: Miss Elias.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending December 3.—Flying time, 9 hrs. 45 mins. Instruction, 6 hrs. 25 mins.; soloists, 3 hrs. 5 mins.; passengers, 15 mins.

Instruction.—With Capt. Beck: Miss Watson, Dr. Ling, Messrs. Ward, A. Crowther, Ellison, Jackson, Brown, G. Thomson, Hepworth.

Solo Instruction.—A. Crowther, Ellison, Brown.

"A" Pilots.—M. B. Lax, Lister.

I. Surrounded by gloom again this week! Our only ray of sunshine has been the visit of Charlie Blackburn, piloted by Capt. A. M. Blake on the demonstration Bluebird, on Friday.

Blake and the Bluebird having been swallowed by this gloom, are still here and hope to get a peep at the aerodrome boundary before Christmas.

Our Tommy Brown and another member who refuses to disclose his identity for publication, wafted themselves into the air for the first time on their own. Both disported themselves playfully and managed to keep the aerodrome in view.

The club will be closing down for the Christmas holidays from December 23 to 28.

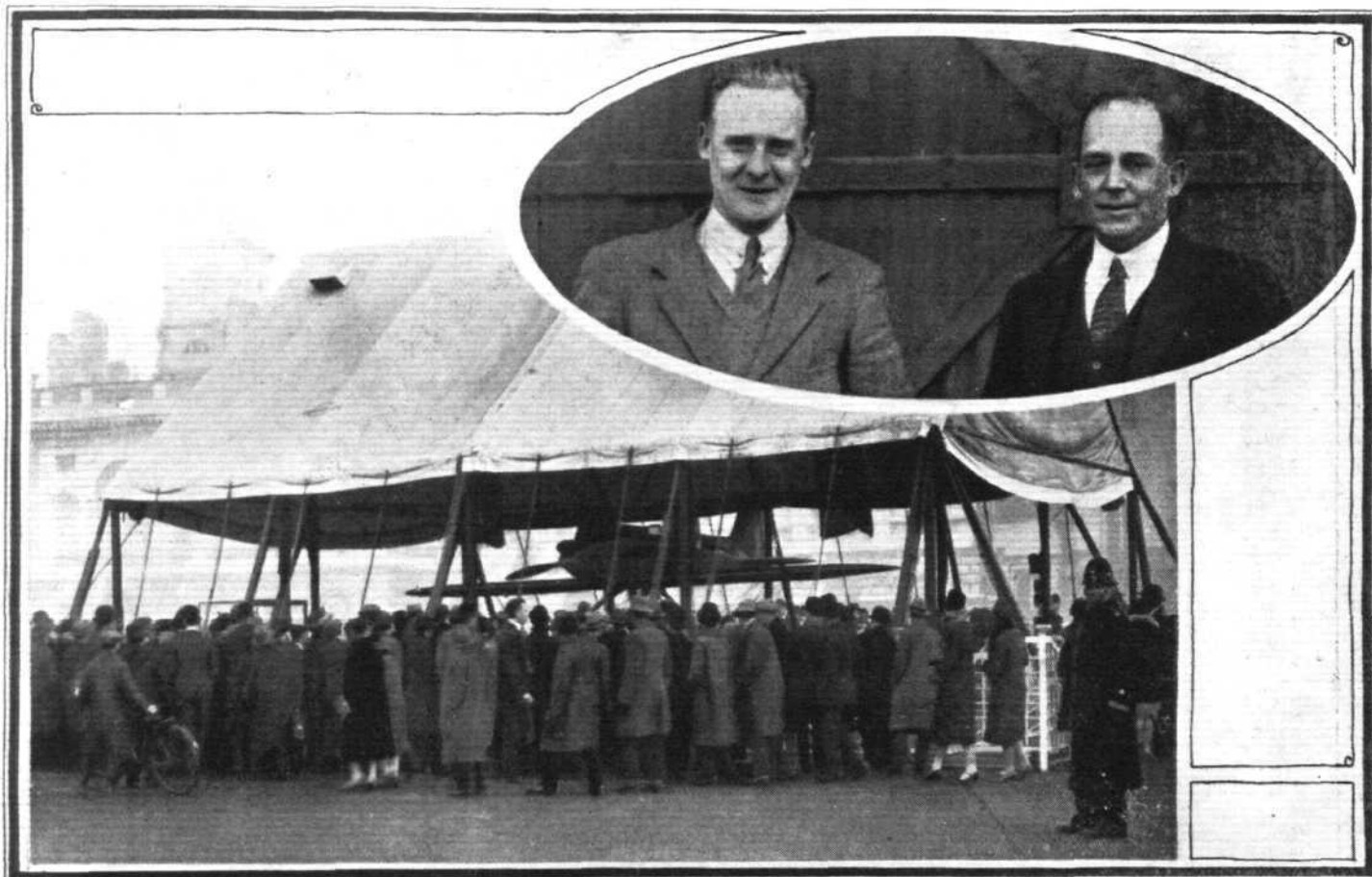
Beyond the Tweed

THE Scottish Flying Club is now on the verge of flying activity, after long and strenuous efforts to exist. Membership is increasing daily and now stands at 200, of which 120 are pilot members. Among the members are two private owners: the Marquis of Douglas and Clydesdale, who owns a D.H. "Moth," and Flight-Lieut. Drew who owns an Avro "Avian." Their president is The Rt. Hon. Lord Weir of Eastwood, and chairman, Air-Commodore J. G. Weir. The services of Flight-Lieut. Jones, well-known in the Service as "Red 'ot Jones," have been secured for pilot instructor.

"Red Rose" Continues

CAPT. LANCASTER and Mrs. Keith Miller reached Karachi from Bander Abbas on December 4, in their Avro "Avian" named the "Red Rose." They are on their way to Australia. The "Avian" in South Africa

THE Earl of Athlone, Governor-General of the Union, in his capacity as President of the Aero Club of South Africa, recently accepted on behalf of that body an Avro "Avian" light aeroplane presented by the Shell Company of South Africa. The ceremony took place at Wynberg and the machine was then handed to the Cape Town Flying Club.



"AIR-MINDEDNESS": The Supermarine-Napier S.5 seaplane on which Flight-Lieut. Webster won the Schneider Trophy Race on view at the Horse Guards' Parade. If the machine had not been two months en route from Venice, the interest in it would have been considerably greater. Inset, Mr. R. J. Mitchell and Mr. G. S. Wilkinson, designers of the machine and engine respectively.

AIRISMS FROM THE FOUR WINDS.

African Survey Flight Delayed

SIR ALAN COBHAM is still at Malta, where his Short "Singapore" flying-boat is undergoing slight repairs. It was while the machine was being towed in a high sea that one wing-tip float was carried off. During mooring, it was considerably buffeted by the heavy seas and one wing began to submerge. It became necessary, therefore, to beach the machine on the concrete slipway. The assistant pilot leaped on board and the cinematographer swam out and made the wing fast. The R.A.F. helped, and after a great effort, the flying-boat was brought to safety. The hull withstood the strain perfectly, but unfortunately one wing was slightly damaged. The cruise will be continued shortly. Sir Alan met the Committee, appointed by the Malta Government to discuss Malta as an air junction for commercial air services and he advised them that attractions should be provided for machines as the climatic conditions were suitable for the purpose of air lines. He promised to inspect the Island, and give further advice before leaving.

Great Flying-Boat Cruise

THE programme for the Indian stage of the R.A.F. "Southampton" flying-boats' cruise has been slightly modified. It will now be as follows:—Bombay, December 15; Mangalore, December 27; Cochin, December 29; Colombo, December 31; Trincomalee, January 12; Chembatambakam Lake (Madras), January 17; Coconada, January 20; Chilka Lake, January 23; Calcutta, January 27;

Akyab, February 3; Rangoon, February 6; Mergui, February 13; Victoria Point, February 16; Port Swettenham, February 23; Singapore, February 27. The machines are now at Karachi.

Proposed French Atlantic Flight

It is reported that Capt. Costes and Lieut. Le Brix, who flew from Paris to Brazil in October, propose to cross the Atlantic from New York to Paris when their present South American tour is concluded. The attempt will probably be made at the beginning of February. The two airmen essayed a direct flight from Buenos Aires to Rio de Janeiro on December 3, but after flying a distance of 800 miles in 7½ hours, they were forced by bad weather to descend at Florianopolis on the Brazilian Island of Santa Catharina. The next day they reached Rio de Janeiro about 5 p.m.

Fate of a Pioneer Airman

THE body of an airman which has been washed up on the Port au Port Peninsula, on the West Coast of Newfoundland, is thought to be that of Count de Lesseps, of Toronto, who disappeared some weeks ago when making an air survey of forest areas on the Gaspé Peninsula. He was a pioneer pilot.

R.A.F. Flight Finished

THE Air Force flight of Fairey machines to Kano, Nigeria, and back from Cairo, has concluded. Only one of the three machines that set out completed the flight, however. One crashed at El Fasher on the outward journey,



THE WAKEFIELD SURVEY FLIGHT AROUND AFRICA : This photograph of Sir Alan Cobham's Short "Singapore" beached at Malta, gives an indication of the "strafing" which the machine received during the gale. It is an eloquent testimony to the strength of metal construction that in spite of the damage sustained by the lower port wing, the metal hull is perfectly intact. There is little doubt that under similar circumstances a wooden hull would have been wrecked.

and the second broke its propeller shaft on the return journey at El Obeid. A spare shaft is being taken by air to El Obeid.

Chilian Claim to Slotted Wing

THE invention of the slotted wing is claimed by Alfredo Leigh, a Chilian air expert, who states that he has two English patents, and various documents to prove he experimented with slotted wings two years before the English device appeared.

Faked Record Sequel

M. CALLIZO, the French pilot who claimed false "records" and was later deprived of his honours, is now being proceeded against by the Blériot Aviation Company on a charge of obtaining money by false pretences. It is alleged that Callizo received a sum of 25,000 £ from that company, by which he was employed, when he was acclaimed the holder of the height record. The Air Ministry had paid this amount to the company as compensation for designing a supposed record-breaking machine, and the Company passed it on to Callizo in view of their contract with him. A similar sum was refunded to the Air Ministry by the Company when Callizo was exposed, and now the Company has asked Callizo to refund the sum to them, which has not been done.

Disturbances in Iraq

Iraq territory is threatened with an attack by Feisal ed Dowish, the Wahabi Sheik, who is reported to have a force of 5,000 tribesmen preparing for the affray. R.A.F. Bombing squadrons are keeping a vigilance on developments. A squadron from Basra recently carried out punitive operations as a result of an attack on an Iraq police post.

New Swedish Invention for the Delivery of Air Mail

A SPECIALLY constructed parachute for the dropping of air mail was recently demonstrated near Stockholm to the Swedish Postmaster-General and to Gen. Amundson, the head of Sweden's military aviation force. The inventor, Mr. Arnold Waldau, has provided the mail parachute with a special mechanism that automatically opens the parachute



A Napier on the Road

THE Air Ministry has granted permission to Capt. Malcolm Campbell, the racing motorist, to use an engine of the type which won the Schneider Trophy in a racing car, with which he proposes to enter a land speed contest at Daytona Beach Florida.

S.B.A.C. Appointments

CAPT. P. D. ACLAND, of Vickers, Ltd., has been elected Chairman of the Society of British Aircraft Constructors for the ensuing year; Commander J. Bird, of the Supermarine Aviation Company, Vice-Chairman of Aircraft; and Mr. H. T. Vane, of Napier and Sons, Ltd., Vice-Chairman of Engines. Mr. J. Lord, of A. V. Roe and Co., is treasurer.

Long-Distance Pilots Return

CAPT. MCINTOSH and Mr. Bert Hinkler arrived in London from Poland on December 2 after their attempt to fly to India in the Fokker monoplane, which failed entirely through bad weather. They owed much to the reliability of their "Jupiter" engine when in a very tight corner, and also to the Reid Turn Indicator. Capt. McIntosh proposes to make another effort in February or March if the necessary financial assistance is forthcoming.

Air Minister and Airship Programme

SIR SAMUEL HOARE spoke at a meeting of the Oxford University Conservative Association on December 2, and mentioned he hoped the two new airships would be completed some time next year.

Development of Croydon Aerodrome

SIR SAMUEL HOARE will perform the ceremony at the opening of the new road at Croydon Aerodrome on December 9 at 3.30 p.m. It will be formally handed over to the Urban District Council of Beddington and Wallington, and the following morning Plough-Lane will close to through traffic. The full improvement to the aerodrome will then be facilitated. All the terminal buildings and hangars will be in the north-east corner, and for ascending and landing there will be a cleared area of ground; whereas now, with the present position of the buildings grouped in the centre of the aerodrome, only half the room is available. Demolition will commence in January, and the new hangars and administrative offices will be used at the new site at the Purley Way. In this quarter the largest aircraft will be housed in huge ferro-concrete hangars, with workshops and stores adjoining. Against them will be the Aerodrome Control Tower above an attractive block of buildings. Imperial Airways are already using the hangars. Workmen will soon start levelling a section of Plough Lane on the Purley

at a certain given height above the ground. In this way the driftage caused by the wind is to a great extent eliminated, so that the parachute can be dropped with far greater precision than before and land within a short distance of its objective. The Postmaster-General expressed the opinion that the invention would prove especially useful in places difficult to reach by ordinary means, such as, for instance, isolated pilot stations in winter time.

New Autogiro?

SIGNOR VITTORIO ISACCO, an Italian engineer, has brought before the Air Ministry an aeroplane of his invention, having rotating wings. Other Governments are also interested in the machine.

Aircraft Construction in Canada

WE learn from the High Commissioner for Canada in London that the construction of aeroplanes is proceeding at such a rate at the aircraft factory of Messrs. Canadian Vickers, Ltd., that it is proposed to extend the present plant by the erection of another building. It was only last autumn that a new shop was added, and this is now being transformed into a two-storey structure. Of 32 machines in course of construction or on order, 12 are part of the Royal Canadian Air Force special programme of 26 machines. These are Avro land machines for training purposes at Camp Borden. The feature of the other machines under construction is a special type for aerial photographic survey work, which has been so highly developed in Canada. It is a Vickers "Velos" with two "Wasp" engines of 425 h.p. each equipped with electric starters. It is designed for high-altitude photography and has an enclosed cabin arranged for clear vision, and all-metal floats for landing on water. Forest fire suppression and photography enter largely into the requirements for other machines which are in hand, and which include eight Vickers "Vedette" three-seater, single-engined flying-boats, two Vickers "Veruna" seven-passenger machines (these being twin-engined flying-boats), one Vickers "Vista," and one Vickers "Vigil."

side of the central buildings, which will give a clear run for the machines over both halves of the aerodrome. A part of the lane which extends to Stafford Road will still be open for the removal of war-time buildings and houses.

Flying Above the Fog

THE degree to which the standard Marconi wireless apparatus used on Imperial Airways machines flying between Croydon and the Continent is relied upon is shown by the experience of Capt. A. S. Wilcockson, an Imperial Airways pilot who, on November 24, flew a Handley-Page Rolls Royce aeroplane from Paris to Croydon above a fog bank which obscured the ground practically the whole of the way. Five minutes after leaving Paris, Capt. Wilcockson found himself in dense fog and had to rise 2,000 ft. to get above it. At this height the aeroplane was flying in bright sunshine and continued to do so for the greater part of the journey. It was, however, necessary to fly entirely by compass bearing. The pilot asked for several bearings and positions from Croydon during the journey and these brought him in on a direct line to the Croydon aerodrome. There was one break in the fog, about 10 miles from Croydon, which enabled the pilot to recognise the ground and corroborate the fact that he was on the right bearing. The fog then closed in again and in his own words he "dropped right on to the aerodrome." The apparatus used was the ordinary Marconi A.D.6 set, and not any new or special apparatus, as had been reported. The five passengers on the machine had a very happy and comfortable journey and were quite thrilled with their novel experience.

"S.5" on View

ABOUT 100,000 people have visited the Horse Guards Parade during the past week to inspect the Supermarine Napier S.5, which won the Schneider Trophy. It was brought in sections from Felixstowe for the exhibition and erected by R.A.F. mechanics in view of a large crowd. Squad.-Ldr. Slatter, who captained the English team, Maj. Buchanan, Comdr. Perrin and Flying-Officer Moon superintended the placing of the machine into position. The Schneider Trophy was also shown. The exhibition finished on December 7.

R.A.F. Ensign Dedicated

THE Bishop of Chester dedicated a R.A.F. Ensign in Chester Cathedral on November 20. Sir Samuel and Lady Hoare, who were visiting the Bishop of Chester and Mrs. Paget, to whom they are related, were present. The R.A.F. personnel from Sealand also attended. Sir Samuel Hoare placed a wreath at the foot of the pillar bearing the statue of St. Christopher.

SIR CHARLES WAKEFIELD DINNER

At the Savoy Hotel, on December 5, a dinner was given by Sir Charles Cheers Wakefield, Bart., C.M.G., to the Royal Aeronautical Society and the Institute of Aeronautical Engineers, to celebrate the amalgamation of these two bodies and to present certain medals to three very prominent members.

Sir Charles Wakefield stated that it was his first duty and a very pleasant one to present three medals. The Taylor Gold Medal for 1927 was awarded to Capt. F. S. Barnwell, whose paper entitled "Some Notes on the Design of Air-Screws" was considered by the Council the most valuable paper submitted during the session. Capt. Barnwell had a very distinguished record as a scientist and as a pilot, and had been interested in aircraft design for twenty-two years—a record that would be hard to beat.

Sir Charles then expressed his pleasure in asking Capt. Barnwell to accept the medal.

Continuing, he said that he was next asked to present to Sqdn.-Ldr. G. H. Reid the Council's Silver Medal, given annually to the member who had made the best contribution to the science or practice of aeronautics during the year. On this occasion the Council had in mind the "Reid Turn Indicator" and the "Reid Reaction Indicator." Except for a brief period when for reasons beyond his control, Sqdn.-Ldr. Reid was unable to obtain free access to the air—except for breathing purposes—he had been actively engaged in flying since 1914. He was sure, therefore, that his contributions to practical aeronautics would be of great and permanent value.

The presentation to Sqdn.-Ldr. Reid was then made.

Continuing, Sir Charles said it was his privilege now to present the first of the Annual Gold Medals, which bore his name, to Mr. M. L. Bramson, which was awarded for the design of an invention or apparatus tending towards safety in flying. This was the "Savage-Bramson Anti-Stall Gear." It was common knowledge that Mr. Bramson had written other names than his own in letters of smoke across the heavens (Mr. Bramson was a sky-writing pilot), but he hoped that his valuable invention would write his own name in far more enduring fashion.

Sir Charles then made the presentation to Mr. Bramson, with hearty congratulations and good wishes.

Continuing, he said that the Toast which he now had the honour to propose bore witness to the joint association of two distinguished scientific bodies. It was the marriage of winter and spring, for the Royal Aeronautical Society was the oldest and most famous Society of its kind in the world, while the Institution of Aeronautical Engineers was young in years but not in wisdom. This was a union of more than ordinary promise, and a matter of general satisfaction amongst all who had the progress of aviation at heart that it had been satisfactorily completed. Credit for this was due to many gentlemen whose names were household words wherever aviation was discussed or practised, and particularly to:—Col. The Master of Sempill; Col. Moore-Brabazon; Mr.

Handley-Page; Mr. Frederick R. Simms and Mr. Norman J. Hulbert.

Offering his cordial good wishes to the amalgamated bodies Sir Charles said that the growth of aviation as a practical contribution to the amenities of civilised life was an outstanding fact of the last decade, and the development would be maintained and enhanced in the future, although many difficulties would have to be overcome. We needed not only a common stock of research and experiment but also to arouse keen and wide-spread public support for aviation. Nothing would awaken this aeronautical patriotism more than further scientific discovery rapidly confirmed by successful demonstration in the air. The prospect before the Society was both challenging and exciting. He asked them to drink to the Toast, with which he associated the names of two distinguished members, Air Vice-Marshal Sir Sefton Brancker and Lt.-Col. Moore-Brabazon. They were prophets and priests of the aeronautical age that is to be.

Sir Sefton Brancker then rose and outlined the history of the two aeronautical bodies and mentioned the necessity of getting the Society on a proper paying basis and claiming as their slogan—solidarity. He eulogised the work of Mr. Laurence Pritchard and Mr. Norman J. Hulbert in the successful association, and that of Col. The Master of Sempill and Col. Moore-Brabazon. Finally, he paid a moving tribute to Sir Charles Wakefield, the Patron Saint of Aviation, whom, he said, they honoured, respected and loved.

Col. Moore-Brabazon next responded and on concluding he presented cigarette cases to Mr. Howard Flanders, Mr. L. Wingfield, and Mr. Norman J. Hulbert, on behalf of the Institute for the fine work they had done for that body.

The Toast to "Aviation" was proposed by Sir Francis K. McClean, who gave a very humorous account of the "non-mathematical" days of flying, and he was supported by Col. The Master of Sempill and replied to by Mr. F. G. L. Bertram, Deputy Director of Civil Aviation.

Finally, Lord Thomson of Cardington proposed the Toast to "The Chairman."

Amongst the guests was Mr. Bert Hinkler who had recently returned to England after his fine attempt on the long-distance record with Capt. McIntosh. He was congratulated on this flight and Sir Charles Wakefield asked him to give an account of it, to which Mr. Hinkler complied very modestly.

The guests invited included:—Mr. Handley-Page, Mr. C. R. Fairey, Mr. T. Sopwith, Mr. O. Short, Major R. H. Mayo, Mr. A. V. Roe, Mr. J. D. Siddeley, Mr. H. T. Vane, Mr. H. E. Wimperis, Mr. F. Sigrist, Col. W. A. Bristow, Capt. P. D. Acland, Sqdn.-Comdr. J. Bird, Comdr. Burney, Col. M. O. Darby, Mr. Roy Fedden, General P. R. C. Groves, Mr. Woods-Humphrey, Capt. A. G. Lamplugh, Major H. Hemming, Mr. R. N. Dangerfield, Capt. F. T. Courtney, Mr. W. Lappin, Mr. R. A. Loader, Mr. A. Limb, Mr. R. Luen, Mr. C. F. Lumb, Capt. H. Broad, Mr. W. H. Berry, Capt. Oram, Mr. R. J. Parrott, Comdr. H. E. Perrin, Mr. G. F. Sanger, Mr. F. R. Simms.

IMPERIAL AIRWAYS

Satisfactory Annual Report

THE Third Ordinary General Meeting of Imperial Airways, Ltd., was held at the Hotel Cecil on November 29, and the Chairman of the Company, Sir Eric Geddes, presided. In his speech, Sir Eric stated that the accounts showed an improvement in net result of £31,876 2s. 11d. (This yielded a net profit of £11,461 as compared with a loss of £20,415 last year.) Aircraft and engines stood at £275,000, less £20,000 for units written off. During the year, the addition of £113,000 mostly represented the aircraft and engines purchased for the Middle-East section.

Cash and investments stood at nearly £153,000 as compared with £95,000 of last year. A credit balance of over £54,000 was brought forward as against £22,000 last year, which meant they were now working at a gross profit as a result of their bold policy in re-organising the fleet. Further, it made possible the catering for additional traffic with their existing fleet independently of and without any subsidy on further miles flown.

Aviation and general insurance accounted for £8,000 odd, and the directors were convinced that no other air transport company in the world enjoyed such favourable rates, which were a direct result of their "safety first" policy.

The increase in the traffic amounted to 5,000 passengers,

75 tons of baggage and general merchandise, and 10 tons in letter and parcel mail. It had been said that the vast majority of their passengers were American tourists, but the majority nationality was actually British, who represented 45 per cent. of the whole passenger traffic. Of the remaining 55 per cent., foreign visitors so discriminated their services.

Flights completed to schedule for the year under review came to 92 per cent. in Europe, and in the Middle-East, where flying conditions were so much better, the Cairo-Basra line had operated with a regularity of 100 per cent. since its inauguration, eleven months ago. The traffic on this service was improving, and the mail carried was worthy of particular mention, continued Sir Eric. Approximately, one-third of the total mail between England and Iraq and over half the total incoming mail from Iraq was conveyed by this air line.

Concerning the political situation in this quarter the British Government had provided for a fortnightly service between Cairo and Karachi, and at the time this agreement was entered into they were assured that all necessary political arrangements had been satisfactorily completed. At the last moment, however, the Persian Government failed to ratify the Convention and thus prevented the objective, which was, of course, a through service from Egypt to India. Subsequent

plans have now been made with the British Government whereby the full subsidy originally negotiated for the fortnightly service to India is being earned by increasing the frequency to a weekly service between Cairo and Basra, which was roughly half of the whole route.

The Imperial Airways' organisation was sufficiently advanced to make the through route to India along the Persian coast should the Persian Government's attitude relax, but meanwhile the alternative way along the Arabian side of the Gulf was being prepared, as regards preliminaries, by the British Government.

Commenting upon the future optimistically, providing the Government adopted a courageous policy in assisting the establishment of Empire Air Routes and stood loyally by Imperial Airways, Sir Eric mentioned that Germany voted subsidies in 1926 amounting to over £760,000, and the estimate for 1927 showed that, with local subsidies paid by municipalities, the sum comes to more than £1,300,000. French air lines for 1927 receive £634,000, and the effect of this heavily

subsidised competition had been the dropping of fares on certain routes to below economic level.

Almost 60,000 miles had been flown by Imperial Airways during the year on special charters for business houses, newspapers, and others requiring quick travel at short notice.

The fleet used in Europe consisted of 15 aircraft, 8 of which were so closely similar and had so many interchangeable components that, for practical purposes, they might be regarded as being of the same type. In addition, there were five machines of one type on the Cairo-Basra line.

Before concluding, Sir Eric Geddes paid a tribute to the services of the late Capt. F. L. Barnard, their well-known senior pilot, to the general manager, Major Woods-Humphrey, and to the entire staff.

Then Sir Edward Manville proposed that the Meeting considered the present Government subsidy inadequate for the services rendered and that it should be substantially increased. This was seconded by Mr. Handley Page, and carried unanimously.

THE ROYAL AIR FORCE

London Gazette, November 29, 1927

General Duties Branch

D. J. T. Haynes is granted a permanent commn. in rank of Pilot Officer, with effect from Nov. 15, and with seniority of Nov. 15, 1926.

The following Pilot Officers are promoted to rank of Flying Officer:—W. F. Lovering, L. S. T. Brown (July 12); E. C. Foreman (Sept. 13); W. G. Woolliams, C. Warsaw, P. S. Cook (Oct. 11); A. M. D. Howes, W. E. P. Johnson, P. G. Lucas, A. Allen, L. G. Martin (Nov. 8); L. C. L. Murray, E. H. Irving, F. Townsend, A. A. Koch (Oct. 26). Wing Commander W. R. Read, M.C., D.F.C., A.F.C., is placed on retired list at his own request (Nov. 14); Flight-Lieut. M. A. Simpson is placed on retired list on account of ill-health (Nov. 30); Flying Officer R. F. Findlay resigns his permanent commn. (Nov. 13).

Medical Branch

The following are granted short service commns. in rank of Flying Officer for three years on the Active List, with effect from, and with seniority of, Nov. 15:—V. V. Brown, M. Clancy, W. Heron, M.B., F. E. Lipscomb, J. F. McGovern, M.B., C. P. O'Toole, S. B. S. Smith, G. H. J. Williams, D. A. Wilson. The following Flying Officers are promoted to rank of Flight-Lieut.: E. Thompson (Nov. 22), E. A. Aslett (Dec. 1).

Flight-Lieut. J. E. Cox relinquishes his temporary commission (Nov. 5).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commanders: H. R. Busteed, O.B.E., A.F.C., to R.A.F. Station, Worthy Down, Supernumerary, pending posting to No. 10 Sqn. (on formation), 26.11.27. S. Smith, D.S.O., A.F.C., to H.Q., Middle East, for personnel Staff duties, 4.11.27.

Squadron Leaders: G. W. Roberts, M.C., to R.A.F. Depot, Uxbridge, 18.11.27. K. R. Park, M.C., D.F.C., to No. 111 Sqn., Duxford, 18.11.27.

Flight Lieutenants: T. S. Ivens, to R.A.F. Depot, Uxbridge, 1.11.27. J. L. M. de C. Hughes-Chamberlain, C. Rapley, and L. de V. Chisman, to R.A.F. Depot, Uxbridge, 22.10.27. A. J. E. Broomfield, D.F.C., to Air Ministry (Signals Branch), 1.11.27. P. D. Robertson, A.M., to R.A.F. Base, Calshot, 16.10.27. G. E. Ranson, to R.A.F. Depot, Uxbridge, 16.10.27. S. S. Benson, A.F.C., to Station H.Q. and Storage Unit, Andover, 16.10.27. J. Cottle, M.B.E., D.F.C., M. M. Freehill, D.F.C., J. S. Harrison, and D. M. Fleming, to R.A.F. Depot, Uxbridge, 16.10.27. C. Findlay, D.F.C., to Central Flying Schl., Wittering, 16.10.27. K. A. Meek, M.B.E., to Armament and Gunnery Schl., Eastchurch, 16.10.27. H. J. Gemmel, to No. 111 Sqn., Duxford, 16.10.27. C. H. Harrison, to R.A.F. Station, Duxford, 8.11.27. F. H. Lawrence, M.C. and G. M. Moore, M.C., to R.A.F. Depot, Uxbridge, 28.10.27.

Memorandum

The permission granted to Lieut. D. C. S. Bland to retain rank is withdrawn on his enlistment in the Territorial Army (Oct. 3).

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

R. F. Findlay is granted a commission as Flying Officer in Class A, on resignation of permanent commn. (Nov. 13). Pilot Officer J. H. Gresham is promoted to rank of Flying Officer (Nov. 26). Pilot Officer on probation E. E. Fresson is confirmed in rank (Nov. 17).

Pilot Officer D. J. T. Haynes resigns his commn. on appointment to a permanent commn. (Nov. 15). The following Flying Officers relinquish their commissions on completion of service:—W. A. Syme (Sept. 18), W. Woodman (Sept. 18), P. Smallwood (Oct. 7), P. Chauncey (Nov. 24).

Medical Branch

Flying Officer C. J. MacQuillan, M.B., B.A., is transferred from Class Dii to Class Di (Nov. 26).

AUXILIARY AIR FORCE

General Duties Branch

The following to be Pilot Officer:—No. 602 City of Glasgow (Bombing) Squadron.—W. H. Mitchell (Nov. 1).

Stores Branch

Squadron Leaders: C. M. Bevan, to R.A.F. Depot, Uxbridge, 22.10.27. F. E. J. Coates and A. W. Smith, to R.A.F. Depot, Uxbridge, 16.10.27.

Flight Lieutenants: A. M. Saywood and L. N. Sargent, to R.A.F. Depot, Uxbridge, 16.10.27.

Flying Officers: W. J. Eagle, to R.A.F. Depot, Uxbridge, 16.10.27. C. J. Elliott, to No. 2 Stores Depot, Altrincham, 29.11.27. F. W. Todd, to Station H.Q., North Weald, 11.10.27. H. D. Giblett, to No. 208 Sqn., Middle East, 17.11.27.

Accountant Branch

Flight Lieutenant R. H. Cleverley, to R.A.F. Depot, Uxbridge, 16.10.27. **Flying Officers:** H. A. Murton and R. W. L. Glenn, to R.A.F. Depot, Uxbridge, 16.10.27. J. M. Hopkins, to Station H.Q., North Weald, 11.10.27. F. M. Hall, to Station Accounts Office, Hinaidi, 1.11.27.

Medical Branch

Wing Commander W. A. S. Duck, O.B.E., to R.A.F. Depot, Uxbridge, 1.11.27.

Squadron Leader P. T. Rutherford, O.B.E., to R.A.F. Depot, Uxbridge, 16.10.27.

Flight Lieutenants: J. J. Clarke, to R.A.F. Depot, Uxbridge, 22.10.27. G. J. Griffiths and D. B. Smith, M.B., to R.A.F. Depot, Uxbridge, 16.10.27.

Flight Lieutenant (Dental) S. A. McCormack, to H.Q., Middle East, 16.10.27.

IN PARLIAMENT

R.A.F. Commissions

LIEUT.-COMMANDER KENWORTHY, on Nov. 24, asked the Secretary of State for Air, seeing that it is stated in the advertisements issued by the Air Ministry for apprentices in the Royal Air Force that a certain number of commissions will be granted to suitable candidates each year, if he will give the number of commissions granted to non-commissioned ranks of the Royal Air Force each year since its formation; and how many of these commissions were given to non-commissioned officer pilots?

Sir S. Hoare: Aircraft apprentices have a double opportunity of obtaining a commission. A certain number are selected every half year for cadships at the Royal Air Force Cadet College, Cranwell, whence they are granted commissions on the successful completion of the ordinary two years' course at the college. The number of cadships granted since this system came into force has been:—

(1922), 2; (1923), 7; (1924), 7; (1925), 11; (1926), 10; (1927 to date), 4. In addition, the commissioned ranks have now been opened to selected airmen pilots and three of such direct commissions were given in 1926 and five to date in 1927.

Singapore Base

LIEUT.-COMMANDER KENWORTHY, in November 30, asked the First Lord of the Admiralty whether the total estimate of £7,750,000 for the cost of the

work at Singapore includes the expenditure for notifications and other military works, barracks for the garrison, aerodromes, air defences, and the like; and what is the total estimate of expenditure which will fall on the War Office and Air Ministry Votes?

Mr. Bridgeman: As indicated in the Estimates presented to Parliament, the sum of £7,750,000 represents the estimated cost of developing the naval base in the Old Strait at Singapore. It does not include the cost of military and air defences required for the defence of Singapore. I understand that these are still under consideration, but in any case, the question of their cost is one for my right hon. Friends the Secretaries of State for War and Air to answer.

Airship R100 (Photographs)

Mr. Rose asked the Secretary of State for Air if his attention has been called to photographs published in the Press of Airship R100 now in the course of construction at Howden; and if such photographs which reveal the technical details of the structure have been published by his authority?

Sir P. Sassoon: I have seen the photographs in question, and there appears to be no objection to the publication of any of them which have come to my notice. The answer to the second part of the question is in the negative.

Mr. Rose: Has the hon. Gentleman assured himself that these photographs are not enlargements of some schoolboy's essay with a No. 3 Meccano set?

AIR POST STAMPS

By DOUGLAS B. ARMSTRONG

(Editor of "The Stamp Collector")

Havana—Key West Air Post

THE newest air post line was opened up between Key West (Florida) and Havana (Cuba), on October 19 last, under the auspices of the Pan-American Airways Inc. Considering the extent of the commercial relations between Cuba and the U.S.A., this should prove a very useful and popular service.

Special cachets were provided for use on letters carried on the initial flights in either direction, but it would appear that the proposed Cuban air mail stamp was not ready in time for the inauguration. Mr. Alan Turton has shown me several covers flown over this route, all of which are franked with ordinary postage stamps of Cuba cancelled with a running postmark containing the words "IER. Viaje Habana-K. W. Servicio Postal Aereo," in black. All are dated October 18th, which appears to be the earliest date.

At the American end, an octagonal cachet containing the insignia of the air mail service, together with inscription "First Flight under New Contract, Key West-Havana, October 19, 1927. Foreign Air Mail Route, Key West, Fla." was struck in magenta on all first day covers in addition to the regulation postmark of that town.

It is proposed, in due course, to extend the service so as to link the United States with South and Central America by way of Jamaica and other West Indian Islands.

The design approved for the official Cuban air mail stamp is the work of the native artist, Senor Oscar Fontes Acosta. It depicts an aeroplane taking off from Havana Harbour with fronded palm trees on either side of the vignette. Across the top runs the inscription "Republica de Cuba—Servicio Aereo" and the face value is 5 centavos. Although the actual printing of the stamp is being carried out by the National Company of Graphic Art at Havana, the plates have been supplied by an American firm, the Security Bank Note Company, of Philadelphia.

Cuba's First Air Mail

It is more than thirteen years since the first experimental air post flight was carried out by the aviator, Jaime Gonzalez in his monoplane *Morande* from Santa Clara to Havana, on February 24, 1914. The souvenir cards and envelopes issued for the occasion are today of considerable rarity. They bear a vignette of an aeroplane in flight in addition to a trilingual inscription in Spanish, Portuguese and English. No special stamps or cachets were employed, the air post fee of 10 centavos being prepaid by means of an ordinary Express Delivery stamp of the period which by coincidence shows an aeroplane flying over the Morro Castle at Havana, although at the time of its issue there was no thought of an air post service in Cuba.

Several other experimental flights are believed to have taken place since that date, but details of these are lacking. Perhaps some reader who is familiar with aerial conditions in Cuba can oblige?

German Air Post Sale Fiasco

WRITING from Berlin under date of November 28, our correspondent Mr. Erik Hildersheim informs us that the sale of the Count von Matzenau's air post collection proved a dismal fiasco. Overseas buyers had not sufficient time in which to send their bids, telegraphic bids received could not be read, with the result that most of the best items were bought in. A few prices realised were as follows:—Zeppelin cards, £2 10s. to £2 15s. apiece; sheet of Bavaria 25 pf., semi-official air post stamp, £6; U.S.A. Albany, first flight, £5 10s.; Colombia 1921-23, 5c. yellow and 5 pesos olive, both overprinted "R" (uncatalogued varieties), £2 12s. each.

New Aero Stamps in Prospect

AIR post stamps in three denominations, viz., 1, 6 and 20 leva, are about to be issued in Bulgaria, when the air mail service inaugurated last year is resumed between Sofia and Varna in the early spring. Another European territory where air post stamps are impending is the Saar Valley, their face values being 50 centimes and 1 franc respectively.

Until now the air mail service connecting Baghdad with Cairo has been conducted without the aid of distinctive stamps, but it is reported that the creation of a special air mail stamp on the Egyptian pattern is at present under consideration by the Irak Government, and may shortly be expected to make its appearance.

CORRESPONDENCE

THE SCHNEIDER CUP

[2166] I have read your article on "That Speed Record," with much interest as it shows how, apparently, the Air Ministry is quite indifferent to pushing forward our attempt at the speed record, in order to beat Italy.

On top of this I read in *The Times*, that the Air Ministry does not intend to help us to win the cup next year, owing to the expense entailed.

A suggestion is to institute a fund to which the public will be asked to subscribe, and that the pilots will be drawn from the civil side of aviation.

Now the civilian side has taken part in all previous races of late years and I think I am correct in saying that only once, i.e., in 1922, did we win the cup.

The other nations were supported by their respective Governments.

This year we had the support of the Government and won; which speaks for itself.

I, therefore, plead for assistance from the Air Ministry, as I am sure do yourself, and your readers.

NORMAN E. NEVILLE.

Fareham, Hants.

December, 1927.

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The Lift of Hydrogen

THE problem of the airship—full-sized or model—would indeed easily be solved if hydrogen possessed the lift stated in Mr. Schlötel's article last week (page 826) on "Model Airships." Unfortunately, however, a cubic foot of this gas will not lift 60-68 lbs., as the omission of a few 0's would have us believe! Actually, of course, the lift is between 60 and 68 lbs. per 1,000 cub. ft.

A Valuable Diary

THE *R.A.F. and British Empire Air Services Diary* for 1928 has just been published. Everyone in the aeronautical community finds occasion for immediate reference to past events in the history of aviation and current information of a varied nature. This diary efficiently provides the need, and is therefore very convenient and valuable, and should be possessed immediately. It can be obtained at 1s. 6d., 2s., 3s. or 7s. 6d. (postage extra), and is very cheap at these prices. The publishers are Gale and Polden, Ltd., Wellington Works, Aldershot. Ten per cent. of the published price of every copy sold will be handed to the Royal Air Force Memorial Fund.

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AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.e. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1926

Published December 8, 1927

- 19,836. C. D. BURNEY and AIRSHIP GUARANTEE CO., LTD. Mooring-masts for lighter-than-air aircraft. (280,285.)
23,027. AIRSHIP GUARANTEE CO., LTD., C. D. BURNEY, B. N. WALLIS, and J. E. TEMPLE. Rigid airships. (280,327.)
23,862. M. A. KLAUCK. Airship anchorage. (280,332.)

APPLIED FOR IN 1927

Published December 8, 1927

- 2,478. C. J. B. MADSEN and OTHERS. Rotary i.e. engine. (265,220.)
2,914. C. F. UWINS and BRISTOL AEROPLANE CO., LTD. Control-gear for aircraft. (280,406.)

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